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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,450	07/22/2003	Edison Lao Ting	SVL920030017US1	1449

45727 7590 06/11/2007

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ART UNIT	**PAPER NUMBER**
2166	

MAIL DATE	DELIVERY MODE
06/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,450	TING ET AL.	
	Examiner	Art Unit	
	Navneet K. Ahluwalia	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *21-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the appeal brief filed on 01/31/2007, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. ('Lin' herein after) (US 6,941,521 B2) further in view of Liu et al. ('Liu' herein after) (US 2004/0168119 A1).

With respect to claim 1,

Lin discloses a system to order a plurality of nodes associated with entities in a document, said system comprising: a node generator parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities (Figure 1, column 3 lines 63 – 67 and column 4 lines 20 – 42, Lin); a node grouper grouping said created plurality of nodes into a plurality of regions, each of said regions defining an area within a n-dimensional space, wherein n is greater than one (Figure 4, column 5 lines 19 – 40, Lin); and a formatter for formatting said plurality of regions for storage (column 14 lines 12 – 24, Lin).

Lin, however does not disclose the formatter for formatting explicitly as claimed.

Liu teaches the formatter for formatting as claimed (paragraphs 52 – 53 and 57, Liu).

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both the inventions are in the field of document processing and finding relationships amongst nodes (paragraph 11, Liu). Furthermore, the formatting of Liu invention would allow the document to be rendered through the web browser (paragraph 57, Liu).

4. Claims 2 – 10 are rejected under the same rationale given for claim 1. The citations of the elements claimed and taught are listed below.

With respect to claim 2,

Lin as modified discloses a system as per claim 1, wherein said regions are node descendant regions (Figure 2A and column 4 lines 5 – 32, Lin).

With respect to claim 3,

Lin as modified discloses a system as per claim 1, wherein said formatted regions are stored in one or more pages (column 14 lines 12 – 24, Lin).

With respect to claim 4,

Lin as modified discloses a system as per claim 1, wherein said set of regions are grouped by said node grouper based upon anticipated access pattern and usage (Figure 4, column 5 lines 19 – 40, Lin).

With respect to claim 5,

Lin as modified discloses a system as per claim 1, wherein said node grouper additionally monitors insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region (column 7 lines 15 – 39, Lin).

With respect to claim 6,

Lin as modified discloses a system as per claim 1, wherein said document is a mark-up language based document (column 3 lines 41 – 53, Lin).

With respect to claim 7,

Lin as modified discloses a system as per claim 6, wherein said mark-up language based document is an XML document (column 3 lines 41 – 53, Lin).

With respect to claim 8,

Lin as modified discloses a system as per claim 1, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes (paragraph 74, Liu).

With respect to claim 9,

Lin as modified discloses a system as per claim 1, wherein said system is implemented across networks (Figure 8, Lin).

With respect to claim 10,

Lin as modified discloses a system as per claim 9, wherein said network is any of the following: local area network, wide area network, or the Internet (Figure 8 and column 14 lines 8 – 12, Lin).

With respect to claim 11,

Lin discloses a method for ordering a plurality of nodes associated with entities in a document, said method comprising: parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities (Figure 1, column 3 lines 63 – 67 and column 4 lines 20 – 42, Lin); grouping said created plurality of nodes into a plurality of regions, each of said regions defining an area within a n-dimensional space, wherein n is greater than one (Figure 4, column 5 lines 19 – 40, Lin); and formatting said plurality of regions for storage (column 14 lines 12 – 24, Lin).

Lin, however does not disclose the formatter for formatting explicitly as claimed.

Liu teaches the formatter for formatting as claimed (paragraphs 52 – 53 and 57, Liu).

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because both the inventions are in the field of document processing and finding relationships amongst nodes (paragraph 11, Liu). Furthermore, the formatting of Liu invention would allow the document to be rendered through the web browser (paragraph 57, Liu).

5. Claims 12 – 20 are rejected under the same rationale given for claim 11. The citations of the elements claimed and taught are listed below.

With respect to claim 12,

Lin as modified discloses a method as per claim 11, wherein said regions are node descendant regions (Figure 2A and column 4 lines 5 – 32, Lin).

With respect to claim 13,

Lin as modified discloses a method as per claim 11, wherein said formatted regions are stored in one or more pages (column 14 lines 12 – 24, Lin).

With respect to claim 14,

Lin as modified discloses a method as per claim 11, wherein said set of regions are grouped based upon anticipated access pattern and usage (Figure 4, column 5 lines 19 – 40, Lin).

With respect to claim 15,

Lin as modified discloses a method as per claim 11, wherein said method comprises the additional step of monitoring the insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region (column 7 lines 15 – 39, Lin).

With respect to claim 16,

Lin as modified discloses a method as per claim 11, wherein said document is a mark-up language based document (column 3 lines 41 – 53, Lin).

With respect to claim 17,

Lin as modified discloses a method as per claim 16, wherein said mark-up language based document is an XML document (column 3 lines 41 – 53, Lin).

With respect to claim 18,

Lin as modified discloses a method as per claim 11, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes (paragraph 74, Liu).

With respect to claim 19,

Lin as modified discloses a method as per claim 11, wherein said method is implemented across networks (Figure 8, Lin).

With respect to claim 20,

Lin as modified discloses a method as per claim 19, wherein said network is any of the following: local area network, wide area network, or the Internet (Figure 8 and column 14 lines 8 – 12, Lin).

Response to Arguments

6. Claims 1 – 20 are pending in this Office Action. After a further search and a thorough examination of the present application, claims 1 – 20 remain rejected.

7. Applicant's arguments filed with respect to claims 1 – 20 have been fully considered but they are not persuasive.

***First**, Applicant argues that there is no teaching in Ferrari et al. of a node generator that parses entities of a document and creates nodes that represents entities and relationships among the entities.*

In response to Applicant's argument, the Examiner submits that Ferrari teaches the node generator in Figures 14A, B and C where the information of a document is converted into to ordered nodes (attributes and values) in a tree structure according to

the relationships amongst them. Also in paragraph 0096 it is explained how the arrangement of the nodes is in accordance with the order relationships. In paragraph 0097 it is disclosed that the nodes are identified and developed by the processing and analysis of the documents.

***Second**, Applicant argues that there is no teaching in Ferrari et al. of grouping nodes of a document into a plurality of regions wherein these regions define an area within an n-dimensional space.*

In response to Applicant's argument, the Examiner submits that Ferrari teaches the grouping of nodes in Figure 17 where the information of a document is grouped into nodes according to the attributes and values. Also paragraphs 0091 and 0103 disclose the natural grouping of the documents into domains according to their attributes, information and the storage of the sub-collection of documents grouped together to be retrieved all at once. The multidimensional space of the regions is disclosed in paragraph 258 using the algorithm for multidimensional navigation of the partitions. Also in a tree structure there would be a multidimensional space.

***Third**, Applicant argues that there is no teaching in Ferrari et al. of a formatter for formatting said plurality of regions for storage.*

In response to Applicant's argument, the Examiner submits that Ferrari teaches the formatting of the materials and documents within the knowledge base. The classification and value formats associate the items in the collection as disclosed in

paragraph 0021 and these collections are stored together as explained in paragraph 0103. The organization and collection of documents into domains is also explained in paragraph 0091.

Claim 11 recites the same subject matter and for the same reasons as cited above the rejection is maintained. Claims 2 – 10 and 12 – 20 depend on claims 1 and 11 respectively and the rejection is sustained on all the above-mentioned claims.

8. Hence, Applicant's arguments do not distinguish the claimed invention over the prior art of record. In light of the foregoing arguments, the 102 and 103 rejections are sustained.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1 – 7, 9 – 17 and 19 – 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ferrari et al. ('Ferrari' herein after) (US 2003/0097357 A1).

With respect to claim 1,

Ferrari discloses a system to order a plurality of nodes associated with entities in a document, said system comprising:

- a node generator parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities (Figure 14A-C and page 7 paragraphs [0090 and 0096], Ferrari);
- a node grouper grouping said created plurality of nodes into a plurality of regions, each of said regions defining an area within a n-dimensional space (page 17 paragraph [0251], [0258], Ferrari), wherein n is greater than one (Figure 14A-C and page 7 paragraph [0091 - 0092], Ferrari); and
- a formatter for formatting said plurality of regions for storage (Figure 14A-C, 15, page 3 paragraph [0019] and page 8 paragraph [0103], Ferrari).

With respect to claim 2,

Ferrari discloses a system as per claim 1, wherein said regions are node descendant regions (page 4 paragraph [0061-0062] and page 13 paragraph [0146 – 0147], Ferrari).

With respect to claim 3,

Ferrari discloses a system as per claim 1, wherein said formatted regions are stored in one or more pages (page 8 paragraph [0103], Ferrari).

With respect to claim 4,

Ferrari discloses a system as per claim 1, wherein said set of regions are grouped by said node grouper based upon anticipated access pattern and usage (+page 8 paragraph [0103] lines 1 – 7, Ferrari).

With respect to claim 5,

Ferrari discloses a system as per claim 1, wherein said node grouper additionally monitors insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region (page 14 paragraph [0156], Ferrari).

With respect to claim 6,

Ferrari discloses a system as per claim 1, wherein said document is a mark-up language based document (page 7 paragraph [0088], Ferrari).

With respect to claim 7,

Ferrari discloses a system as per claim 6, wherein said mark-up language based document is an XML document (page 7 paragraph [0088], Ferrari).

With respect to claim 9,

Ferrari discloses a system as per claim 1, wherein said system is implemented across networks (Figure 24, Ferrari).

With respect to claim 10,

Ferrari discloses a system as per claim 9, wherein said network is any of the following: local area network, wide area network, or the Internet (page 7 paragraph [0088], Ferrari).

With respect to claim 11,

Ferrari discloses a method for ordering a plurality of nodes associated with entities in a document, said method comprising:

- parsing said entities in said document and creating a plurality of nodes that represent said entities and relationships that exists among said entities (Figure 14A-C and page 7 paragraph [0090], Ferrari);

- grouping said created plurality of nodes into a plurality of regions, each of said regions defining an area within a n-dimensional space (page 17 paragraph [0251], [0258], Ferrari), wherein n is greater than one (Figure 14A-C and page 7 paragraph [0091 - 0092], Ferrari); and
- formatting said plurality of regions for storage (Figure 14A-C, 15, page 3 paragraph [0019] and page 8 paragraph [0103], Ferrari).

With respect to claim 12,

Ferrari discloses a method as per claim 11, wherein said regions are node descendant regions (page 4 paragraph [0061-0062] and page 13 paragraph [0146 – 0147], Ferrari).

With respect to claim 13,

Ferrari discloses a method as per claim 11, wherein said formatted regions are stored in one or more pages (page 8 paragraph [0103], Ferrari).

With respect to claim 14,

Ferrari discloses a method as per claim 11, wherein said set of regions are grouped based upon anticipated access pattern and usage (page 8 paragraph [0103] lines 1 – 7, Ferrari).

With respect to claim 15,

Ferrari discloses a method as per claim 11, wherein said method comprises the additional step of monitoring the insertion or deletion of nodes in each of said regions, whereby modifications to nodes within a particular region affects only said nodes in said particular region, said modifications causing nesting levels to be created based of a parent level region (page 14 paragraph [0156], Ferrari).

With respect to claim 16,

Ferrari discloses a method as per claim 11, wherein said document is a mark-up language based document (page 7 paragraph [0088], Ferrari).

With respect to claim 17,

Ferrari discloses a method as per claim 16, wherein said mark-up language based document is an XML document (page 7 paragraph [0088], Ferrari).

With respect to claim 19,

Ferrari discloses a method as per claim 11, wherein said method is implemented across networks (Figure 24, Ferrari).

With respect to claim 20,

Ferrari discloses a method as per claim 19, wherein said network is any of the following: local area network, wide area network, or the Internet (page 7 paragraph [0088], Ferrari).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 8, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrari et al. ('Ferrari' herein after) (US 2003/0097357 A1) as applied to claim 1 – 7, 9 – 17 and 19 – 20 above, and further in view of Tip et al. ('Tip' herein after) (US 2003/0018603 A1).

With respect to claim 8,

Ferrari discloses a system as per claim 1, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes (page 9 paragraph [0111], Ferrari).

Ferrari however does not explicitly state the post order traversal as claimed.

Tip teaches the post order traversal as claimed (the post order traversals allows the relationship test amongst domains, page 5 paragraph [0114] lines 1 – 10, Tip).

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because they are in the same field of hierarchical data structure. Furthermore, the post order traversal of Tip's system would allow efficient membership/relationship test of Ferraris' systems domains (page 5 paragraph [0114], Tip).

With respect to claim 18,

Ferrari discloses a method as per claim 11, wherein said system associates post order traversal numbers with said plurality of nodes, said post order traversal numbers identifying containment relationships among nodes (page 9 paragraph [0111], Ferrari).

Ferrari however does not explicitly state the post order traversal as claimed.

Tip teaches the post order traversal as claimed (the post order traversals allows the relationship test amongst domains, page 5 paragraph [0114] lines 1 – 10, Tip).

It would have been obvious to one of ordinary skill in the art of data processing at the time of the present invention to combine the teachings of cited references because they are in the same field of hierarchical data structure. Furthermore, the post order

traversal of Tip's method would allow efficient membership/relationship test of Ferrari's methods domains (page 5 paragraph [0114], Tip).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navneet K. Ahluwalia whose telephone number is 571-272-5636.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam T. Hosain can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Navneet

Navneet K. Ahluwalia
Examiner
Art Unit 2166

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Dated: 06/04/2007